

Review of 22 Training Programs for Physician's Assistants 1969

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Recently, there has been an ever increasing demand for medical care services by the U.S. population. Productivity in the health care sector, however, has lagged behind demand. Several means for increasing productivity have been suggested. One possibility is to organize and use current resources more efficiently through the extension of group practice, automation, and health planning. Another is to increase the supply of existing personnel and to develop new types of practitioners (1,2). One new type, the physician's assistant, has generated a great deal of interest, especially among health care educators, and is seen by many as a possible means to increase physician productivity and patient satisfaction (3-7).

It has long been recognized that some of the procedures performed by the physician could be delegated to other health professionals. Even though the idea of the physician's assistant is of relatively recent origin in the United States, equivalent types of health personnel have been in existence in other parts of the world for centuries. The feldsher was introduced in Russia in the 1700's, and in many developing countries the assistant medical officer represents the "doctor" for large segments of the population (8).

In this country, health educators have been experimenting with the concept of a physician's assistant for the past decade. Several educational-training programs have been developed and are now growing rapidly. Little, however, is known about the characteristics of these programs and the extent to which they are similar or different. The following review examines the various programs on some of the relevant elements of curriculum, duties of the graduate, student characteristics, and other attributes.

Method

Of the 32 programs reviewed, seven were given at Marshfield

Clinic, Marshfield, Wis., where training was offered for specialist assistants in oncology, gastroenterology, pediatrics, ophthalmology, neurosurgery, general surgery, and orthopedics. Some programs were not reviewed either because information was not available or because we did not know of their existence at the time of this study. With the exception of four private and four Public Health Service programs, all programs were in the early stages of planning or implementation. It was not possible to obtain complete data on all aspects of the 32 programs, as indicated in the tables. In general, data are given on 22 programs.

Each organization offering a program was contacted by mail or telephone in the fall of 1969, and they were asked to provide descriptive materials if available. The data for this study were obtained from these written reports.

There are characteristics which are unique to each program. In general, however, the programs could be classified or dichotomized into programs to train generalists or specialists. Generalists were trained in 11 programs and specialists in 15 programs. The programs are listed on page 858.

Location of Training Programs for Physician's Assistants

Generalist Programs

- Physician's Assistant*—Broadus Hospital, Alderson Broadus College, Philippi, W. Va.
- Physician's Assistant*—Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, N.C.
- Marine Physician's Assistant*—(formerly the Purser-Pharmacist Mate) U.S. Public Health Service Hospital, Staten Island, N.Y.
- Clinical Corpsmen*—Cleveland Clinic Hospital, Cuyahoga Community College, Parma, Ohio.
- Physician's Assistant*—Duke University, Durham, N.C.
- Clinical Associate*—University of Kentucky, Lexington.
- Medical Services Associate*—Brooklyn Cumberland Medical Center, Long Island University, Greenvale, N.Y.
- Community Health Aide*—Alaska—Public Health Service, Anchorage, Alaska.
- Physician's Assistants*—Bureau of Prisons, Public Health Service, Springfield, Mo.
- Tribal Community Health Representative*—Public Health Service, Tucson, Ariz.
- MEDEX Physician-Extension*—University of Washington, Seattle.

Specialist Programs

- Surgeon's Assistant*—University of Alabama, Birmingham.
- Ophthalmic Assistant*—Baylor College of Medicine, Houston, Tex.

- Child Health Assistant*—Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, N.C.
- Neurology Assistant*—Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, N.C.
- Orthopedic Assistant*—City College of San Francisco, San Francisco, Calif.
- Child Health Associate*—University of Colorado, Boulder.
- Physicians Associates in Anesthesia*—University of Colorado, Boulder.
- Medical Assisting*—Pacific Medical Center, DeAnza Junior College, Cupertino, Calif.
- Anesthesia Assistant*—Emory University, Atlanta, Ga.
- Medical Practice Specialist (Cardiac)*—Grady Hospital, Emory University School of Medicine, Atlanta, Ga.
- Medical Technologist*—Downstate Medical Center, State University of New York, Albany.
- Circulation Technology Division*—College of Medicine, Ohio State University, Columbus.
- Emergency Medical Technician*—University of Pittsburgh, Pittsburgh, Pa.
- Emergency Medical Technician*—Ohio State University, Columbus.
- Physician's Assistant*—oncology, gastroenterology, pediatrics, ophthalmologics, neurosurgical, general surgical, and orthopedics—Marshfield Clinic, Marshfield, Wis.

Programs Training Generalists

Data are presented in table 1 on the curriculums of the 11 generalist programs. The general assistant programs have much in common in their curriculums. All included studies of the basic sciences, basic laboratory procedures, and medical instrumentation.

Eight of the 11 programs provided some clinical experience, and nine of the schools offered courses in a medical specialty. Nine of the programs also offered on-the-job training for the general assistant. Most programs did

Table 1. Selected educational requirements of 11 generalist programs

Requirement	Number of programs
Basic sciences.....	11
Basic laboratory procedures.....	11
Basic medical instrumentation.....	11
Clinical experience.....	8
Medical specialty courses (medical terminology, medical ethics, medical history, and community health).....	9
On-the-job training.....	9
Social sciences (psychology, sociology, or similar courses).....	4

not include courses in psychology, sociology, or similar disciplines. Public health, preventive medicine, and medical care organization are generally lacking in the curriculums.

Information on the duties of graduates is shown in table 2. The information for this table was provided by nine programs. All anticipated that the graduate would keep records, and eight of the nine trained the assistant to give emergency care. In addition, nearly four-fifths trained students to give diagnostic tests and to take medical histories. Six of the

Table 2. Duties graduates of nine generalist programs are expected to perform

Duty	Number of programs
Keep records.....	9
Perform emergency care....	8
Take history.....	7
Do routine diagnostic tests.....	7
Perform physical examinations.....	6
Monitor vital signs.....	6
Suture cuts.....	5
Draw blood and urine samples.....	5
Assist in operating room...	4
Start and monitor intravenous feeding.....	4
Order tests.....	4
Counsel patients.....	4

NOTE: Information unavailable on 2 programs.

nine trained the assistant to give medical examinations. In five programs the assistants were trained to suture cuts and to draw routine samples of blood or urine. In less than half, the graduates were trained to assist in the operating room, to start and monitor intravenous feeding, to

Table 3. Selected characteristics of 11 generalist programs

Characteristic	Number of programs
Student characteristics:	
Ex-corpsmen or other health experience.....	7
Mostly male.....	6
Curriculum length:	
2 years.....	4
More than 2 years.....	1
Less than 2 years.....	6
Program characteristics:	
Developed by medical school.....	4
Stipends given.....	6
Tuition charged.....	2
Licensed or in process....	4
Need for continuing education recognized...	3
Source of funding:	
Government grant or other government funds.....	6
Foundation grant.....	2
Government and foundation grants.....	1

NOTE: 1 program is unfunded and source of others are unknown.

order tests, or to counsel patients.

Other selected characteristics of the 11 programs which train general assistants are listed in table 3. These characteristics include background of students, curriculum length, program characteristics, and sources of funding.

A majority of the programs select as students ex-military corpsmen or others with some health experience (for example, licensed practical nurses). More than half the programs are composed largely of male students, and curriculum length is generally less than 2 years' duration. Most programs are federally funded, and more than half provide stipends for their students. Only four of the 11 programs were developed by medical schools, and only four have licensure or are in the process of obtaining it for their graduates.

Specialist Programs

The programs training specialist-type physician assistants were also examined as to curriculum and duties of trainees. Data concerning the similarity of specialist programs on selected educational attributes are presented in table 4.

Almost all the different programs offered basic sciences. Nine of the 11 specialty programs reporting provided courses in this area. A little more than half of the curriculums included training in clinical and basic laboratory procedures and less than half offered on-the-job training and courses in a medical specialty. Courses in basic medical instrumentation and social sciences were reported in only four of the 11 curriculums reviewed.

The various duties students are expected to be able to perform

Table 4. Selected educational requirements of 11 specialist programs

Requirement	Number of programs
Basic sciences.....	9
Basic laboratory procedures.....	6
Clinical experience.....	6
Medical specialty (medical terminology, medical ethics, medical history, and community health)...	5
On-the-job training.....	5
Basic medical instrumentation.....	4
Social science (psychology, sociology, or similar course).....	4

NOTE: Information unavailable for 10 of the programs including the 7 specialty programs at Marshfield Clinic.

are summarized in table 5. The four most common duties are giving routine diagnostic tests, taking histories, giving physical examinations, and recordkeeping. In four of the 11 programs, students were trained to draw blood and take urine samples and were expected to counsel patients. Less than a third of the programs trained students to monitor vital signs, to assist in the operating room, to suture

Table 5. Duties graduates of 11 specialist programs are expected to perform

Duty	Number of programs
Do routine diagnostic tests.....	8
Take history.....	6
Perform physical examinations.....	6
Keep records.....	5
Draw blood and take urine samples.....	4
Counsel patients.....	4
Monitor vital signs.....	3
Assist in operating room...	3
Start and monitor intravenous feedings.....	3
Suture cuts.....	2
Perform emergency care....	2
Order tests.....	2

NOTE: Information unavailable for 10 of the programs including the 7 specialty programs at Marshfield Clinic.

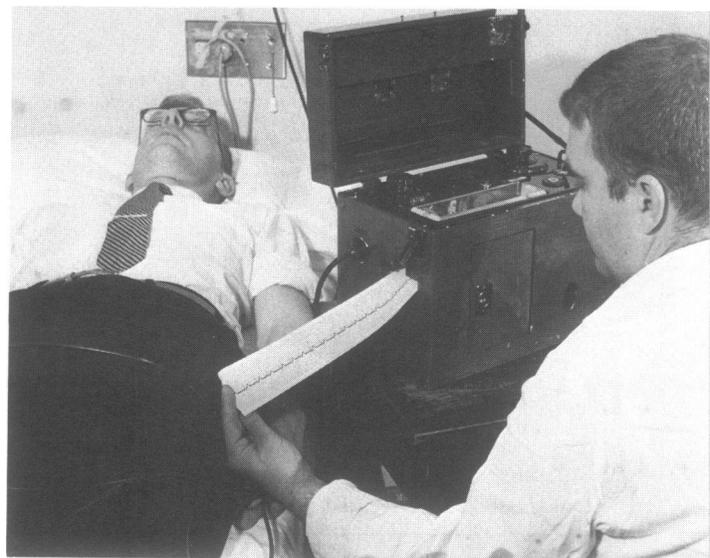
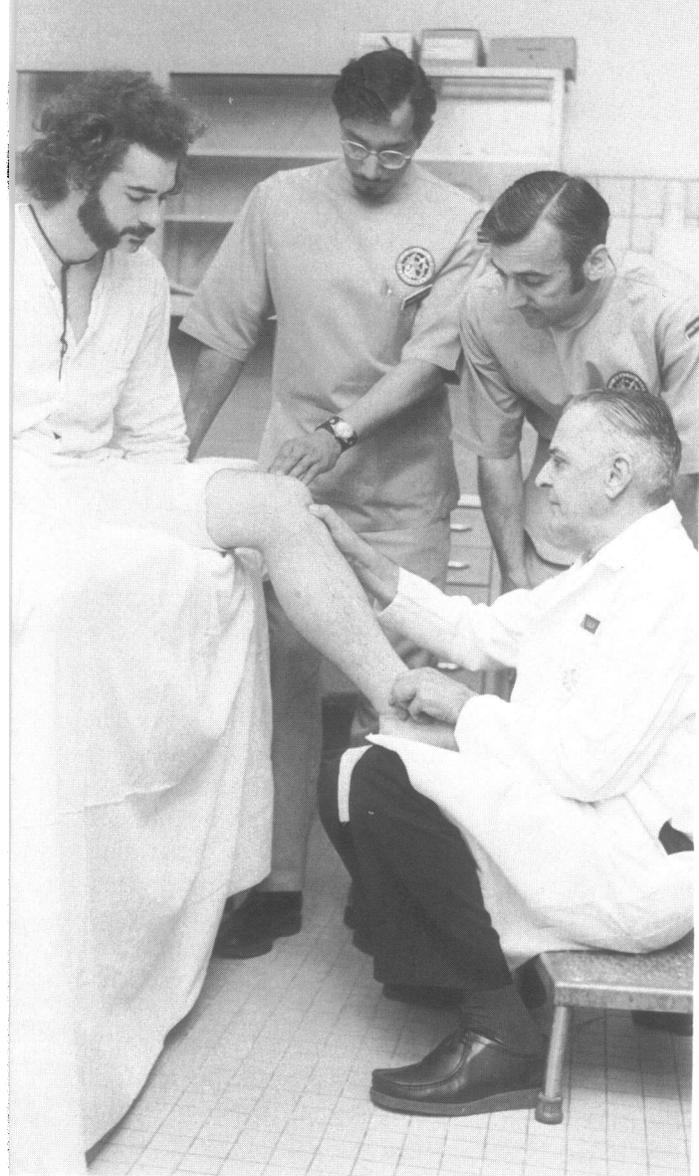


Table 6. Selected characteristics of 11 specialist programs

Characteristic	Number of programs
Student characteristics:	
Ex-corpsmen or other health experience.....	3
R.N. degree needed as base.....	3
Mostly male.....	6
Requirements for admission:	
Only high school.....	2
2 years college.....	6
B.S. degree needed... ..	1
Curriculum length:	
2 years.....	7
More than 2 years.....	6
Less than 2 years.....	6
Program characteristics:	
Developed by a medical school.....	9
Stipends given.....	4
Tuition charged.....	6
Licensed or in process....	4

NOTE: Information unavailable on 10 programs.

cuts, to perform emergency care, or to order tests.

Other selected characteristics of the programs for the training of specialists are shown in table 6. Six of the 11 programs reporting were composed mostly of male students, required 2 years of college for admission, and charged tuition. Only three of the 11 programs indicated that they required or preferred previous health experience for students. Most of these programs were developed by medical schools.

Discussion

Overall there is more agreement among general assistant training programs as to curriculum content than there is in the programs organized to train special assistants. Basic sciences, basic laboratory procedures, and medical instrumentation are included in the curriculum of general assistant programs more often than in that of the specialty programs. The general programs also more often include courses in medical specialty, on-the-job

training, and clinical experience.

These differences in curriculum probably can be explained by the type of assistant being trained and the duties he will be expected to carry out. The general assistant is likely to be more independent and to have a broader range of responsibilities than the specialty assistant. The general assistant, more often than the specialty assistant, takes the patient's history, keeps records, sutures cuts, performs emergency care, and monitors vital signs.

The wider range of duties and responsibilities assigned to the general assistant may also be explained in part by the characteristics of the students recruited by the program. The general assistant is usually male and has had experience in the health field, most often as a medical corpsman with the Armed Forces. The specialized assistant is less likely to have had this kind of health experience. The beginning general assistant is usually better qualified than the specialized assistant by virtue of his more widely diversified training as a corpsman.

Although both types of programs are being developed by medical schools, a majority of the specialized assistant programs begin there. Most of these are 2-year programs. The reverse situation exists for the general programs—slightly more than one-third are of 2 years' duration with the majority requiring less.

Other training programs, not examined in depth here, are also sometimes called physician's assistant training programs. These programs build upon the educational base of the baccalaureate R.N. degree. Two examples are the pediatric nurse practitioner of the University of Colorado

Table 7. Years of education or training associated with various types of programs

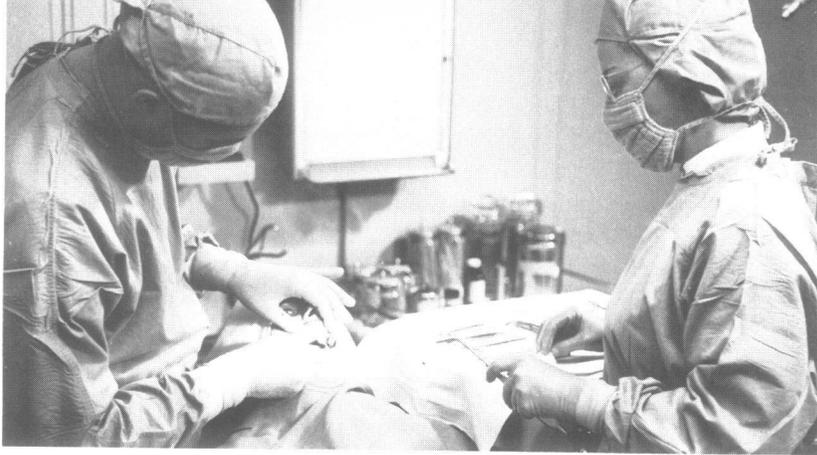
Type of program	Years of education or training
M.D. degree.....	8
R.N. clinical specialist.....	6
Associate level assistant....	5
Baccalaureate R.N., 1st level professional.....	4
Diploma R.N.....	3
Technical nurse, 1st level... ..	2
Physician's assistant.....	2 or less

(9,10) and the family health practitioner of the University of California School of Public Health at Berkeley (11). These programs can be more properly called clinical specialists in pediatrics or family practice. Both offer a master's degree and are recognized by the American Nursing Association, within the framework of its practice committee.

These clinical specialists' programs are viewed as a necessary expansion of the nurse's role to include areas of unmet health needs. This broadening of the scope has followed the tradition of other clinical specialties, such as psychiatric nursing.

In table 7 educational levels of these clinical specialists are compared with that of other training programs. Most of the physician's assistant programs have a 2-year or less academic term built upon experience alone. In terms of education, the master's and associate degrees for nurses remain nearer the doctor of medicine degree than the educational level of most new physician's assistants.

Several areas of difficulty must be examined in any consideration of the new health professional. Perhaps the most important is one of definition of the role of the physician's assistant. The



American Nursing Association's statement on new careerists points out that the "unique and overlapping functions of all colleagues on the total health team now ought to be identified and described. . . . It is imperative therefore that the medical and nursing organizations collaborate in examining the parameters of the physician and nurse roles and of each of the assistant groups" (12). Educators in the health professions must direct their attention to this problem before further developments in training programs are undertaken.

A second consideration is the direction these new careers must ultimately take; for example, the generalist as opposed to the specialist routes. Perhaps there is a

place for both types of assistants. The roles and expectations of each, however, must be more clearly defined and structured within the existing hierarchy of medical care.

To standardize the training of the students, consideration must also be given not only to "what these assistants do," but also to what criteria should be established.

Intimately linked to this consideration is the legal status of physician's assistants. Some programs have attempted, or are currently attempting, to develop a framework for the licensing of graduates, but no final solution has appeared. Licensing would strictly limit the range and type of duties a physician's assistant

could perform. A possible advantage of this medical care role—the flexibility to act for the physician in a wide range of activities—would therefore be restricted. Most programs seem to favor the physician's assuming legal responsibility for the assistant's actions, and a number of insurance companies currently offer malpractice insurance that covers the physician's assistant (13).

Ultimately, the existence of this new health professional must be justified in measurements of the quality as well as the quantity of care that his physician-employer will be able to offer his patients. As of now, this problem, as others, remains unanswered.

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